**Time - Frequency Domain – Alpha – Valence**

**NaiveBayes classifier**

**- Filter:** Partition membership (Random Tree)

Correctly Classified Instances 849 66.3281 %

Incorrectly Classified Instances 431 33.6719 %

Kappa statistic 0.3203

Mean absolute error 0.3534

Root mean squared error 0.5444

Relative absolute error 71.1205 %

Root relative squared error 109.2079 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,706 0,386 0,681 0,706 0,693 0,321 0,696 0,732 1

0,614 0,294 0,641 0,614 0,627 0,321 0,696 0,631 0

Weighted Avg. 0,663 0,344 0,662 0,663 0,663 0,321 0,696 0,685

=== Confusion Matrix ===

a b <-- classified as

487 203 | a = 1

228 362 | b = 0

**SVM(SMO) Classifier**

**- Filter:** Partition membership (Random Tree)

**- Classifier:** SMO(Sequential minimal optimization)

- **FilterType**: Standardize training data

- **Kernel:** PUK

Correctly Classified Instances 1241 96.9531 %

Incorrectly Classified Instances 39 3.0469 %

Kappa statistic 0.9385

Mean absolute error 0.0305

Root mean squared error 0.1746

Relative absolute error 6.1311 %

Root relative squared error 35.0176 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,990 0,054 0,955 0,990 0,972 0,939 0,968 0,951 1

0,946 0,010 0,988 0,946 0,966 0,939 0,968 0,959 0

Weighted Avg. 0,970 0,034 0,970 0,970 0,969 0,939 0,968 0,955

=== Confusion Matrix ===

a b <-- classified as

683 7 | a = 1

32 558 | b = 0

**İBK Classifier**

- **Filter:** Partition membership (Random Tree)

Correctly Classified Instances 1202 93.9063 %

Incorrectly Classified Instances 78 6.0938 %

Kappa statistic 0.8776

Mean absolute error 0.0599

Root mean squared error 0.2425

Relative absolute error 12.0576 %

Root relative squared error 48.6488 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,935 0,056 0,951 0,935 0,943 0,878 0,966 0,966 1

0,944 0,065 0,925 0,944 0,935 0,878 0,966 0,948 0

Weighted Avg. 0,939 0,060 0,939 0,939 0,939 0,878 0,966 0,957

=== Confusion Matrix ===

a b <-- classified as

645 45 | a = 1

33 557 | b = 0

**RandomForest Classifier**

- **Filter:** Partition membership (Random Tree)

Correctly Classified Instances 1210 94.5313 %

Incorrectly Classified Instances 70 5.4688 %

Kappa statistic 0.8901

Mean absolute error 0.0745

Root mean squared error 0.1918

Relative absolute error 15.0005 %

Root relative squared error 38.4794 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,943 0,053 0,955 0,943 0,949 0,890 0,992 0,993 1

0,947 0,057 0,935 0,947 0,941 0,890 0,992 0,990 0

Weighted Avg. 0,945 0,054 0,945 0,945 0,945 0,890 0,992 0,992

=== Confusion Matrix ===

a b <-- classified as

651 39 | a = 1

31 559 | b = 0

**Frequency Domain – Beta – Dominance**

**NaiveBayes classifier**

**- Filter:** Partition membership (Random Tree)

Correctly Classified Instances 867 67.7344 %

Incorrectly Classified Instances 413 32.2656 %

Kappa statistic 0.3574

Mean absolute error 0.3394

Root mean squared error 0.527

Relative absolute error 68.2958 %

Root relative squared error 105.7298 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,639 0,278 0,729 0,639 0,681 0,361 0,717 0,742 1

0,722 0,361 0,631 0,722 0,674 0,361 0,717 0,659 0

Weighted Avg. 0,677 0,316 0,684 0,677 0,678 0,361 0,717 0,704

=== Confusion Matrix ===

a b <-- classified as

441 249 | a = 1

164 426 | b = 0

**SVM(SMO) Classifier**

**- Filter:** Partition membership (Random Tree)

**- Classifier:** SMO(Sequential minimal optimization)

- **FilterType**: Standardize training data

- **Kernel:** PUK

Correctly Classified Instances 1244 97.1875 %

Incorrectly Classified Instances 36 2.8125 %

Kappa statistic 0.9436

Mean absolute error 0.0281

Root mean squared error 0.1677

Relative absolute error 5.6595 %

Root relative squared error 33.6438 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,949 0,002 0,998 0,949 0,973 0,945 0,974 0,975 1

0,998 0,051 0,944 0,998 0,970 0,945 0,974 0,943 0

Weighted Avg. 0,972 0,024 0,973 0,972 0,972 0,945 0,974 0,960

=== Confusion Matrix ===

a b <-- classified as

655 35 | a = 1

1 589 | b = 0

**İBK Classifier**

- **Filter:** Partition membership (Random Tree)

Correctly Classified Instances 1206 94.2188 %

Incorrectly Classified Instances 74 5.7813 %

Kappa statistic 0.8836

Mean absolute error 0.0569

Root mean squared error 0.2364

Relative absolute error 11.4496 %

Root relative squared error 47.427 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,949 0,066 0,944 0,949 0,947 0,884 0,966 0,967 1

0,934 0,051 0,940 0,934 0,937 0,884 0,966 0,943 0

Weighted Avg. 0,942 0,059 0,942 0,942 0,942 0,884 0,966 0,956

=== Confusion Matrix ===

a b <-- classified as

655 35 | a = 1

39 551 | b = 0

**RandomForest Classifier**

- **Filter:** Partition membership (Random Tree)

Correctly Classified Instances 1209 94.4531 %

Incorrectly Classified Instances 71 5.5469 %

Kappa statistic 0.8883

Mean absolute error 0.0738

Root mean squared error 0.1904

Relative absolute error 14.8461 %

Root relative squared error 38.2051 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,952 0,064 0,945 0,952 0,949 0,888 0,992 0,994 1

0,936 0,048 0,944 0,936 0,940 0,888 0,992 0,991 0

Weighted Avg. 0,945 0,057 0,945 0,945 0,945 0,888 0,992 0,992

=== Confusion Matrix ===

a b <-- classified as

657 33 | a = 1

38 552 | b = 0

**Frequency Domain – Gamma – Dominance**

**NaiveBayes classifier**

**- Filter:** Partition membership (Random Tree)

Correctly Classified Instances 790 61.7188 %

Incorrectly Classified Instances 490 38.2813 %

Kappa statistic 0.231

Mean absolute error 0.3803

Root mean squared error 0.5553

Relative absolute error 76.5177 %

Root relative squared error 111.3977 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,635 0,403 0,648 0,635 0,641 0,231 0,674 0,713 1

0,597 0,365 0,583 0,597 0,590 0,231 0,674 0,607 0

Weighted Avg. 0,617 0,386 0,618 0,617 0,617 0,231 0,674 0,664

=== Confusion Matrix ===

a b <-- classified as

438 252 | a = 1

238 352 | b = 0

**SVM(SMO) Classifier**

**- Filter:** Partition membership (Random Tree)

**- Classifier:** SMO(Sequential minimal optimization)

- **FilterType**: Standardize training data

- **Kernel:** PUK

Correctly Classified Instances 1251 97.7344 %

Incorrectly Classified Instances 29 2.2656 %

Kappa statistic 0.9546

Mean absolute error 0.0227

Root mean squared error 0.1505

Relative absolute error 4.559 %

Root relative squared error 30.1963 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,959 0,002 0,998 0,959 0,979 0,955 0,979 0,980 1

0,998 0,041 0,955 0,998 0,976 0,955 0,979 0,954 0

Weighted Avg. 0,977 0,020 0,978 0,977 0,977 0,955 0,979 0,968

=== Confusion Matrix ===

a b <-- classified as

662 28 | a = 1

1 589 | b = 0

**İBK Classifier**

- **Filter:** Partition membership (Random Tree)

Correctly Classified Instances 1222 95.4688 %

Incorrectly Classified Instances 58 4.5313 %

Kappa statistic 0.9088

Mean absolute error 0.0457

Root mean squared error 0.2121

Relative absolute error 9.1871 %

Root relative squared error 42.5597 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,962 0,054 0,954 0,962 0,958 0,909 0,970 0,968 1

0,946 0,038 0,955 0,946 0,951 0,909 0,970 0,955 0

Weighted Avg. 0,955 0,047 0,955 0,955 0,955 0,909 0,970 0,962

=== Confusion Matrix ===

a b <-- classified as

664 26 | a = 1

32 558 | b = 0

**RandomForest Classifier**

- **Filter:** Partition membership (Random Tree)

Correctly Classified Instances 1225 95.7031 %

Incorrectly Classified Instances 55 4.2969 %

Kappa statistic 0.9135

Mean absolute error 0.0687

Root mean squared error 0.1777

Relative absolute error 13.8194 %

Root relative squared error 35.6439 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,965 0,053 0,956 0,965 0,960 0,914 0,994 0,995 1

0,947 0,035 0,959 0,947 0,953 0,914 0,994 0,993 0

Weighted Avg. 0,957 0,044 0,957 0,957 0,957 0,914 0,994 0,994

=== Confusion Matrix ===

a b <-- classified as

666 24 | a = 1

31 559 | b = 0